

**WHAT IS CLAIMED IS:**

1. A microscope having a light source that emits at least a first illuminating light beam that has a first wavelength and a second illuminating light beam that has a second wavelength, and having an optical system for focusing the illuminating light beams onto a specimen, the first illuminating light beam defining a first focal plane and the second illuminating light beam defining a second focal plane,

wherein the spacing of the focal planes can be determined; and a means is provided for performing a relative displacement, by an amount equal to the spacing, between the specimen and the focal plane defined by the second illuminating light beam.
2. The microscope as defined in Claim 1, further comprising an apparatus for superimposition of a first partial image generated with the first illuminating light beam and a second partial image generated with the second illuminating light beam.
3. The microscope as defined in Claim 2, wherein the apparatus for superimposition is a PC.
4. The microscope as defined in Claim 1, wherein the spacing can be determined automatically.
5. The microscope as defined in Claim 1, wherein the first and/or second partial images are three-dimensional partial images.
6. The microscope as defined in Claim 1, wherein the first and/or second partial images are two-dimensional partial images.

7. The microscope as defined in Claim 1, wherein the position of the first and/or the second focal plane can be stored.
8. The microscope as defined in Claim 1, wherein the microscope is a scanning microscope.
9. A confocal scanning microscope having a light source that emits at least a first illuminating light beam that has a first wavelength and a second illuminating light beam that has a second wavelength, and having an optical system for focusing the illuminating light beams onto a specimen, the first illuminating light beam defining a first focal plane and the second illuminating light beam defining a second focal plane,  
wherein the spacing of the focal planes can be determined; and a means is provided for performing a relative displacement, by an amount equal to the spacing, between the specimen and the focal plane defined by the second illuminating light beam.
10. The microscope as defined in Claim 9, further comprising an apparatus for superimposition of a first partial image generated with the first illuminating light beam and a second partial image generated with the second illuminating light beam.